NOTES ON AUSTRALIAN ACACIAS I

by

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SUMMARY

Acacia hakeoides A. Cunn. ex Benth. var. angustifolia (H. B. Williamson) J. H. Willis is raised to specific rank; A. hunteriana N. A. Wakefield is formally relegated to synonymy under A. boormanii Maiden, A. diffusa Lindl. to synonymy under A. genistifolia Link, A. vomeriformis A. Cunn. ex Benth. to synonymy under A. gunnii Benth. and A. diptera to synonymy under A. willdenowiana H. Wendl.; the confusion between A. brownii (Poir.) Steud. and A. pugioniformis H. Wendl. is resolved and A. quadrilateralis DC. brought out of synonymy; the identity of A. bynoeana has been established and shown to be an endemie New South Wales species, A. pumila Maiden et R. T. Baker is relegated to synonymy under A. bynoeana and A. wilhelmiana F. Muell. replaces A. bynoeana as the correct name applied to South Australian, New South Wales and Vietorian material formerly referred to A. bynoeana; A. difformis R. T. Baker is added to the Vietorian flora and Choretrum oxycladum F. Muell, is added as a synonym to A. spinescens Benth.

NOMENCLATURAL AND TAXONOMIC NOTES

Acacia boormanii Maiden in J. Roy. Soc. N.S.W. 49 : 489 (1916). SYN.: Acacia hunteriana N. A. Wakefield in Vict. Nat. 72 : 92 (1955).

Acacia boormanii is a common species in eastern Victoria and the far south-east of New South Wales and seems to be confined mainly to the Snowy River watershed. The author has examined material collected throughout its range and can find no reason to regard A. hunteriana as specifically distinct and accordingly the latter name is relegated to synonymy.

Acacia brownii (Poir.) Steud. Nom. Bot. 2 (1821).

- SYN.: Acacia acicularis R. Br. in Ait. f. Hort. Kew. ed. 2 5:460 (1813), non Humb. et Bonpl. ex Willd. (1809).
 - Mimosa Brownei Poir. in Encycl. Méth. (Bot.) Suppl. 5:530 (1817).
 - Acacia pugioniformis H. Wendl. in Flora 2:139 (1819).

Acacia Arcenthos Spreng. Syst. Veg. 3: 134 (1826).

Acacia juniperina (Vent.) Willd. var. Brownei (Poir.) Benth. Flor. Aust. 2:332 (1864).

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The author in *Vict. Nat.* 73 : 173 (1957) followed G. Bentham's synonymy [*Flor. Aust.* 2 : 332 (1864)] but queried *A. pugioniformis* H. Wendl. (1819). Since then the author has been able to examine all the relevant literature and has established that Wendland published *A. pugioniformis* as a substitute name for *A. acicularis* R. Br. The full synonymy of *A. brownii* is given above together with the corrected author eitation and spelling of the epithet. This species is known from only New South Wales and Vietoria. In 1820, Wendland published another description of *A. pugioniformis* [*Comment. Acac.* 5, 38 t.9 (1820)] and figured a specimen that he considered represented the same species as Brown's *A. acicularis.* It is quite elear that Wendland had confounded two distinct species, one of which is now known as *A. brownii* and the other hitherto called *A. pugioniformis.* DC. (See p. 158).

Acacia bynoeana Benth. in Linnaea 26:614 (1855).

SYN.: Acacia pumila Maiden et R. T. Baker in Proc. Linu.

Soc. N.S.W. Ser. 2 10 : 385 t.28 (1895).

Hitherto the name *Acacia bynoeana* has been applied to a population now known correctly as *A. willuelmiana* F. Muell. and a full discussion of the confusing history of the former name and its relationship to the latter appears later in this paper. The author has compared a fragment of the holotype of *A. bynoeana* with the holotype of *A. pumila* and has no hesitation in asserting that these two names represent the same species. No significant differences of any kind can be found between them and accordingly *A. pumila* is relegated to synonymy under *A. bynoeana*.

The specimen on which Bentham based *A. bynoeana* was gathered by Benjamin Bynoe and it was evidently labelled simply "Australia" with no other data. It is clear now that it must have been collected in the vicinity of Port Jackson by Bynoe during his stay there from 24 July until 11 November 1838.

A. bynoeana is now regarded as an endemie New South Wales species.

Acacia difformis R. T. Baker in Proc. Linn. Soc. N.S.W. 22:154 t.9 (1897).

This species has been known in Victoria for many years but remained unidentified until several years ago. It is well known to the author who has observed it in several places in north-central Victoria, especially near Wytchitella, north of Bendigo, west of Graytown and south of Benalla. *A. difformis* was wrongly placed in *A. retinodes* Schlechtendal and was known as "Mystery Wattle" in the Bendigo district. It is a species that rarely sets fruit and no fruiting material has been noted in this State. *A. difformis* has been gathered at a number of stations in New South Wales where it often forms extensive thickets, e.g. in the vicinity of Merrygoen. It is confined to New South Wales and Victoria.

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Acacia genistifolia Link Enum. Plant. Hort. Berol. 2: 442 (1822).

- SYN.: Acacia diffusa Lindl. in Edwards' Bot. Reg. 8 : t.634 (1822).
 - Acacia prostrata Lodd. Bot. Cab. 7: t.631 (1822), nomen nudum.
 - *Phyllodoce genistifolia* (Link) Link *Handb. Erk.* 2 : 133 (1831).
 - Acacia cuspidata A. Cunn. cx Benth. in Hook. Lond. J. Bot. 1: 337 (1842), non Sehlechtendal (1838).
 - Acacia cuspidata A. Cunn. ex Benth. var. longifolia Benth. in Liunaea 26 : 610 (1855).
 - Acacia diffusa Lindl. var. cuspidata (A. Cunn. ex Benth.) Benth. Flor. Aust. 2:333 (1864).

In Vict. Nat. 74 : 12 (1957), the author discussed the fact that three different names were proposed during 1822 for material hitherto referred to *A. diffusa* but refrained from altering its name. The position with regard to these names ean be clarified now. *A. prostrata* Lodd. is little more than a nomen nudum and was published during August 1822. *A. genistifolia* Link was published during the first half of that year while *A. diffusa* Lindl., according to the date on the plate, was published on July 1, 1822.

Recently a genuine Link specimen of *A. genistifolia* was located in the Melbourne Herbarium (MEL 39790) and it bears a label that reads "Acacia genistifolia Lk! Original A. dilfusa Lindley Hort Bot. reg. Berolin. comm. Museum bot. Berolin. Schumann". This specimen can be taken to be part of the type and leaves no doubt that *A. genistifolia* and *A. diffusa* are conspecifie.

Link's specimen represents the typical form of the population of individuals included in that species. Lindley's eoncept of this species does not represent the typical form as it is understood at present but refers to a more or less flattened phyllode form frequently found in Tasmania. Loddiges illustration of *A. prostrata* indicates that he had the same variant in mind.

A. genistifolia has been recorded from New South Wales, Victoria and Tasmania.

Acacia gunnii Benth. in Hook. Loud. J. Bot. 1: 332 (1842).

SYN.: Acacia vomeriformis A. Cunn. ex Benth. in I. c.

Acacia guunii and A. vomeriformis were described simultaneously and maintained as distinct species until 1859 when Mueller [in J. Linn. Soc. (Bot.) 3:119 (1859)] placed the latter name as a synonym under the former. Although Mueller is here credited with making this decision, it is possible that Bentham who edited Mueller's manuseript was responsible for regarding the two species as conspecific. In a note at the beginning of Mueller's article (l. c. 114) Bentham wrote : " In so far as the specimens have admitted of it, I have, at Dr. Mueller's request, carefully compared his species with those nearly allied to 1hem, and added any remarks which suggested 1hemselves, at the end of his descriptions. In the few cases where I have clearly identified them with others previously described, I have given the published names, adding his manuscript ones for the purpose of reference, and retaining his characters as completing our previous knowledge of the plants."

There is an implication here that Bentham relegated A. vomeriformis to a synonym of A. gunnii but this is opposed to his treatment of these two names in *Flor. aust.* 2 : 350 (1864) where he considered that A. gunnii was a synonym of the former name.

A. gunnii has been recorded from all Australian states excepting Western Australia.

Acacia quadrilateralis DC. Prodr. 2:451 (1825).

SYN.: Acacia pugioniformis H. Wendl, Comment. Acac. 5, 38 t.9 (1820), pro parte non H. Wendl. in Flora 2 : 139 (1819).

Reference has already been made under Acacia brownii (Poir.) Steud. above concerning the confusion that has surrounded the applieation of A. pugioniformis in the past. It is necessary to reject A. pugioniformis as a name that can be applied to material hitherto known under that name and replace it with A. quardilateralis. Candolle's name was based on Sieber Fl. Novae Holl. No. 442 which is represented by two replicates in the Melbourne Herbarium and it undoubtedly represents the same material as indicated by the erroneous interpretation given to A. pugioniformis in the past.

A. quadrilateralis is well-known from Queensland and New South Wales.

Acacia spinescens Benth. in Hook. Lond. J. Bot. 1: 323 (1842).

SYN.: Choretrum oxycladum F. Muell. Fragm. Phys. Aust. 1:121 (1858).

When the late H. U. Stauffer of the Botanie Museum of the University of Zurieh visited the Melbourne Herbarium in December 1963, he drew the author's attention to the existence the name *Choretrum oxycladum* and indicated that this name should be relegated to synonymy under *Acacia spinescens*. The author agreed fully with this assertion. The holotype of *Choretrum oxycladum*, a specimen collected at Port Lincoln (South Australia) by C. Wilhelmi, is filed in the Melbourne Herbarium (MEL 2308), G. Bentham, *Flor. Aust.* 6 : 218 (1873), was unable to satisfactorily place *Choretrum oxycladum* in any genus and suggested that the flowers "... may all possibly be in a monstrous state. If not, the plant must belong to some very different Order." J. M. Black made no mention of *Choretrum oxycladum* in either edition of his *Flora of South Australia*.

A. spinescen is indigenous to South Australia, New South Wales and Vietoria.

Acacia sublanata Benth. in Endl. et al. Emm. Plant. Hneg. 42 (1837).

SYN.: Acacia Inelimannii F. Muell, Fragm. Pliyt, Aust. 11:116 (1881).

G. Bentham cited a Bauer specimen in his original description of *A. sublanata* and gave simply "Australia" as its locality. Later, in *Flor. Aust.* 2 : 378 (1864), he asserted that Robert Brown collected this species along the south coast of Australia but he did not specifically mention Bauer's specimen. At the same time he wrongly relegated *A. pravifolia* F. Muell, to synonymy under *A. sublanata* thus causing confusion which has persisted until the present time. The author has examined the holotype of *A. sublanata* and also two Brown specimens representing the same species in the Kew herbarium. One of Brown's specimens is clearly labelled "Arnheim Bay" and the other "New Holland North Coast" and it seems likely that Bentham misread "North Coast" as "South Coast".

The author has compared an isotype of *A. luelumannii* (a specimen gathered along the Liverpool River by B. Gulliver and filed in the Kew herbarium) with the holotype of *A. sublanata* and has no hesitation in reducing the former name to a synonym of the latter.

A. sublanata has been recorded from Western Australia, Northern Territory and Queensland but *A. pravifolia* is known only from South Australia and New South Wales.

Acacia wilhelmiana F. Muell in Trans. Phil. Soc. Vict. 1: 37 (1855).

- SYN.: Acacia Bynoeana sens. Benth. Flor. Aust. 2:337 (1864) atque auett. cum subseq., non quoad Benth. (1855).
 - Acacia leptophylla F. Muell. Fragm. Phyt. Aust. 4:9 (1863).
 - Acacia calamifolia Sweet ex Lindl. var. willuelmiana (F. Muell.) Benth. Flor. Anst. 2: 339 (1864)—ut var. Wilhelmsiana.
 - Acacia Bynoeana Benth, var. latifolia J. M. Black Flor. S. Aust. ed. 2 2 : 418 f.576 (1948), anglice.

For more than a century uncertainty has surrounded the identity of an *Acacia* common to parts of South Australia, New South Wales and Victoria and hitherto called *A. bynoeana* Benth. Some of this confusion has been due to incorrect data on labels accompanying specimens transmitted to Bentham by Mueller, and it is the author's intention to review this situation and present an account of all pertinent literature (much of which is rare and generally unavailable to botanists) together with comments on the original specimens cited in Bentham's and Mueller's descriptions.

A. bynoeana was originally described by Bentham in Linnaea 26:614 (1855) from material collected by Benjamin Bynoe who was Surgeon on the Beagle during Commander J. Lort Stokes' expedition

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to Australia (1837–43) for the purpose of exploring those parts of the eoast that remained unknown to Flinders and King. The following is Bentham's description :—

"A. Bynoeana, ramulis pubescentibus, phyllodiis breviter subulatis lineariteretibus subcompressisve sulcato-trinerviis uncinato-mucronatis, pedunculis capitulo parvo sub-20-floro longioribus, calyce anguste 5-lobo, petalis angustis.—Fruticulus dense foliatus. Stipulae lanceolatae v. setaceae, lineam fere longae, caducae. Phyllodia pleraque fere pollicaria, conspicue trinervia, mucrone recurvo tenui. Pedunculi hispiduli 3-4 lin. longi. Capitula 11 lin. diametro. Bracteolae lineares, acuminatae, hispidulae. Petala distincta, lineari-subulata, calycem breviter superantia. Ovarium glabrum. (In Australia tropica? Bynoe in herb. Hooker.)"

Bynoe's specimen earries no indication that it was collected in the Australian tropies (the label says simply "Australia Bynoe "), Bentham evidently added "tropica?" of his own accord. Notes on the actual station at which this specimen was gathered are provided in the discussion under A. bynoeana on page 156.

In 1855, Mueller described specimens that he gathered in the Murray serub under the name A. wilhelmiana in the following words :-

"13. Acacia Wilhelmiana.

"Viscidulous; stems angular, puberulous; phyllodia incurved, upright, short linear-filiform, compressed, ending in a broader blunt recurved apex, above or on both sides furrowed and furnished with two thin veins : stipules ovate, acuminate, very glutinous, deciduous or at length spinescent; peduncles axillary, solitary, shorter than the flower-heads; pods viscid, narrow, arcuate, between the seeds slightly contracted.

"In the Mallee Scrub on the Murray, where it was first discovered by Mr. Wilhelmi. "Allied to Acacia Hookeri."

This diagnosis, with slight alterations to wording, was republished in Hook. J. Bot. Kew Gdns Misc. 8: 46 (1856). Hooker, who probably edited Mueller's article, added two footnotes, the first against Acacia wilhelmiana reading "Is a variety of A. nematophylla, F. Muell. (Benth. in Linnaea) " and the second against A. hookeri reading " Is A. ericaefolia, Benth."

In the same year (1855). Bentham took up Mueller's name A. nematophylla and published it with a good description in Linnaea 26:612. This name is a synonym of A. calamifolia Sweet ex Lindl. However, at the end of his description Bentham adds :---" Ejusdem var. ramulis minus angulatis, phyllodiisque gummi resinoso seatentibus legit F. Müll. in Murray-Serub. (A. Wilhelmsiana F. Müll.)" The specimens referred to here represent the same species described as A. wilhelmiana by F. Mueller in the same year and quoted in full above.

Mueller, in J. Linn. Soc. (Bot.) 3:123 (1859), discussed both A. nematophylla and A. wilhelmiana:-

"25. Acacia nematophylla, Ferd. Muell. ex Benth. in Linnaea, XXVI. p.612.

Spencer's Gulf, C. Wilhelmi.

"Legumina pluripollicaria, circiter 3" lata, coriacea corrugata, demum fuscescentia, satis compressa, ad suturas flexuosa. Semina atra opaca ovata v. oblongo-ovata satis compressa strophiolo crasso fulvido fere cymbiformi 1" longitudine excedente suffulta.

"Acacia Wilhelmiana*, a cl. Bentham, I c., cum A. nematophylla conjuneta mihi satis singularis videtur visciditate, phyllodiis brevioribus obtusioribus et leguminibus multo minoribus vix 112" latis. Ceterum vidi nulla hujus speciei exemplaria nisi imperfecta.

"Fratex orgyalis satis amplus. "Specimina cujusdam Acaciae ad sinum Spencer's Gulf a C. Wilhelmi collecta, phyllodiis *A. calamifoliae* simillima legumine compresso (etsi magis recto et vix flexuoso) ad *A. nematophyllam* accedens, aut hujus format varietatem insignem aut potius speciem propriam phyllodiis longioribus acutioribus, legumine fere characeo et strophiolis angustioribus singularem.

Mueller [*Plant. Indig. Colon. Vict.* 2:12 (1863)] makes the following interesting observations :-

"A. Wilhelmiana (F. M. in Transact. Phil. Soc. Victor. i. 37, and in Hook. Kew Miseell. viii. 46), from the vicinity of Port Lincoln, hitherto seen only in a fragmentary state, appears to be a variety of A. calamifolia, characterized by shorter less pointed somewhat gummose viscid and very slightly downy phyllodia, short-silky peduncles, more eoherent sepals and smaller arcuate pods. Certain narrow-phyllodinous states of A. montana, sinalities are actuate pous, certain narrow physicalitous dates of A during A, as well as a species gathered on the Gulf of Carpentaria during A. Gregory's Expedition, exhibit a strong habitual resemblance to A. Wilhelmiana ; whilst again some states of A. linifolia are externally by no means dissimilar to varieties of A. ealamifolia."

In 1863, Mueller described another new species called A. leptophylla (Fragm. Phyt. Aust. 4:9) from material that he thought he had collected in the Gulf of Carpentaria himself. This is the material referred to in the above description.

Bentham, Flor. Aust. 2: 337 (1864), amplified his description of A. bynoeana and included in his description characters drawn from specimens Mueller called *A. leptophylla*. Bentham also provided the following notes under its distribution :—" N. Australia. N. W. coast, *Bynoe*; Gulf of Carpentaria, *F. Mueller*. The latter are the specimens alluded to by F. Mueller, Pl. Viet. ii. 12, as nearly A. Wilhelmsiana. The corresponding ones, both in Herb. Hooker and in Herb. Sonder, were, by some mistake, labelled as A. Wilhelmsiana from the Murray scrub, and were mentioned by me in Linnaea, xxvi. 613, as a var. of A. nematophylla, F. Muell. The latter is, however, a short-leaved form of A. calamifolia, which has never more than 1 nerve on each side of the phyllodium ". Later, l. c. 339, Bentham reduced A. wilhelmiana to a variety of A. calamifolia and added the following comment :---" Under the name of A. nematophylla, F. Muell., 1 had, in Linnaea, xxvi. 612 (owing partly to a wrong label originally sent with F. Mueller's specimens), confounded this variety with the northern A. Bynoeana, which is at onec known by the venation of the phyllodia.

In his great monograph on the Suborder Mimoseae published in Trans. Linn. Soc. Lond. 30: 456 (1875), Bentham continued to maintain that A. bynoeana was a tropical Australian species and retained A. leptophylla as a synonym of it. On page 457 of the same work, he still maintained that A. wilhelmiana was a synonym of A. calamifolia. He also added A. nematophylla, ex parte, as an additional synonym of that name.

Evidently Mueller never admitted A. bynoeana to the floras of southeastern Australia as reference to his Systematic Census of Anstralian Plants (1882), Key to Victorian Plants (1888) and Second Systematic Census of Australian Plants (1889) show. It seems obvious that he eoneluded Bentham was eorreet in assigning A. willielmiana to synonymy under A. calamifolia.

Maiden in J. Roy. Soc. N.S.W. 49 : 501-2 (1916) noted that A. bynoeana had been recorded for north-west Australia and from the Gulf of Carpentaria but added South Australia, New South Wales and Vietoria as additional localities on the basis of specimens gathered by St. Eloy D'Alton, Walter Gill, P. E. Lewis and F. E. Haviland. Undoubtedly Maiden's conclusions were accepted without question by J. M. Black in his *Flora of South Australia* and by H. B. Williamson who wrote up the Leguminosae for A. J. Ewart's *Flora of Victoria*.

Both A. bynoeana (as A. pumila) and A. wilhelmiana (as A. bynoeana) have been adequately described in modern treatments of Acacia, the former by key characters [Beadle et al. Handb. Vasc. Plant. Sydney Distr. Blue Monnt. 222-224 (1962)] and the latter by description and illustration [J. M. Blaek Flor. S. Anst. ed. 2 418 t.576 (1948)] and therefore these species will not be described here.

Acacia willdenowiana H. L. Wendland in Verzeichniss von Treib-Glashaus-Bosquet-Pflangen, Stauden-Gewächsen und Georginen, welche im Königlichen Berggarten zu Herrenhausen bei Hannover für beigesetzte Preise zu haben sind. Hannover. 5 (1845).

> SYN.: Acacia diptera Lindl. in Edwards' Bot. Reg. 23 : Swan Riv. Append. xv (1839), non Humb. et Bonpl. ex Willd. (1809).

Acacia diptera Lindl. var. erioptera Benth. in Hook. Lond, J. Bot. 1: 325 (1842).

Acacia diptera Lindl. var. erioptera R. Graham in Curtis's Bot. Mag. 68 : t.3939 (1842).

Acacia diptera Lindl. var. angustior Meisn. in Lehm. Plant, Preiss. 1:5 (1842).

Acacia diptera Lindl. var. latior Meisn. in I. c. 4.

Acacia diptera Lindl. var. eriocarpa W. V. Fitzg. in J. W. Anst. Nat. Hist. Soc. 1: 44 (1904).

Acacia willdenowiana H. Wendl. must replace A. diptera Lindl. as the name for a well-known Western Australian species recorded from the south-west regions of that State. The confusion that surrounded the application of Wendland's name for many years started when B. Seemann drew attention to the existence of A. willdenowiana on page 72 of Verhandlmgen der k. k. Gartenbargesellschaft in Wien im Jahre 1846 where he erroneously relegated it to synonymy under A. diptera Humb. et Bonpl. ex Willd. Seemann later [Europ. Eingef. Acac. 9] changed his mind and placed A. willdenowiano under A. diptera Lindl, as a synonym and, at the same time, asserted (l. c. 66) that A. diptera Humb, et Bonpl, ex Willd, was a synonym of Prosopis juliflora (Sw.) DC, a native of the Americas. G. Bentham, Flor. Aust. 2 : 324 (1864). followed Scemann's latter assertion and repeated it again in Trans. Linn. Soc. Lond, 35 : 447 (1875).

Through the courtesy of Professor G. Wagenitz of the Systematic-Geobotanical Institute of the University of Göttingen, the author has been able to examine Wendland's original publication where his notes appear as a lootnote to *A. diptera* Humb. et Bonpl. ex Willd. Because of the extreme rarity of this publication, these notes are now quoted in full :—

"Diese Acacia diptera Humb. et Bonpl. in Willdenow's Enumeratio Plantarum horti hotanici Berolinensis 1809 Pars H. pag. 1051, deren Vaterland in America meridionali angegehen ist und zur Ahtheilung Foliis conjugato-pinnatis gehört, darf nicht verwechselt werden mit der Acacia diptera Lindl. Bot. Reg. 1839, welche am Swan River wächst und nach Meissner in Plantae Preissianae pag. 4. zur Abtheilung H. Alatae gehört. Ich erlaube mir daher diese letztere als Acacia Willdenowiana H. Wendl. zu bezeichnen."

Acacia williamsonii A. B. Court comb. nov.

SYN.: Acacia ligulata A. Cunn. ex Benth. var. angnstifolia H. B. Williamson in A. J. Ewart Flor. Vict. 594 (1931).

> Acacia hakeoides A. Cunn. ex Benth. var. angustifolia (H. B. Williamson) J. H. Willis in Vict. Nat. 73: 156 (1957).

Acacia williamsonii is undoubtedly a distinct species almost entirely confined to the Whipstick scrub near Bendigo in the north-central region of the State. It is characterized by its small narrow phyllodes (less than 3 mm wide), small distinctly moniliform pods (less than 4 mm wide), and small flower-heads with fewer than 30 flowers. A. hakeoides has phyllodes always wider than 3 mm, pods which are hardly constricted hetween the seeds and certainly wider than 4 mm, and rather large flower-heads with more than 30 flowers. A. williamsonii is known locally as Whirrakee Wattle and is endemic to this State.

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